

**From:** [Gary Miller](#)  
**To:** [Eric Pastor](#)  
**Cc:** [David\\_Lingle@URSCorp.com](#); [Horne, Jim](#); [Kirby Tyndall](#); [lchampag@tceq.state.tx.us](#); [Voskov, Luda](#); [Margaret\\_Roy@URSCorp.com](#); [Michael Jones](#); [Ron Gouguet](#); [Brown, Steven S \(S\)](#); [Barbara Nann](#); [Dipanjana Bhattacharya](#); [Kevin Shade](#); [Susan Roddy](#); [Carlos Sanchez](#)  
**Subject:** Re: BERA Toxicity Testing  
**Date:** 09/03/2010 04:54 PM

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Eric,

The EPA and TCEQ have reviewed the proposed changes described below to the BERA workplan, and with this email EPA approves the proposed modifications.

Regards,

Gary Miller, P.E.  
Remediation Project Manager  
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▼ "[Eric Pastor](#)" ---09/03/2010 03:59:58 PM---Hi Gary –

**From:** "Eric Pastor" <[eric.pastor@pbwllc.com](mailto:eric.pastor@pbwllc.com)>  
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**Date:** 09/03/2010 03:59 PM  
**Subject:** BERA Toxicity Testing

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Hi Gary –

Per our telephone conversations today, below is a description of the Gulfco PRP Group's proposed modifications to the BERA toxicity testing program and the rationale for those modifications:

1. North Area Soils - Conducting 28-day earthworm (*Eisenia fetida*) chronic bioassays per the BERA Work Plan & Sampling and Analysis Plan is problematic given significantly elevated salinity levels in the six (6) site and three (3) reference/background sample locations. The elevated salinity levels are believed due to frequent inundation with estuarine water during high water events related to frontal passages or tropical storms. As an alternative to the earthworm bioassays, we are



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proposing to treat the nine (9) soil samples from this transitional area as sediment by adding synthetic seawater, and testing the previously identified polychaete *Neanthes arenaceodentata* over a 21-day test duration (growth and survival endpoints). Polychaetes are much more taxonomically similar to earthworms than amphipods such as *Leptocheirus plumulosus* and are members of the “sediment ingesting invertebrate” feeding guild that the earthworm was chosen to represent. The proposed 21-day test duration is conservative given the ephemeral nature of the inundation events. PBS&J can immediately begin the process of preparing the soil samples for *Neanthes* testing. However, test organisms must be ordered from the supplier and will likely not be delivered to PBS&J until approximately September 9. It may therefore only be possible to submit the statistical summary to the EPA within the 60-day BERA data deadline.

2. Wetland Surface Water - Similar to the North Area soils, elevated salinity levels are also a factor for surface water samples EWSW01 and EWSW04 (40‰ and 38‰, respectively), which would likely result in significant stress to the existing test organisms, mysid shrimp (*Mysidopsis bahia*). The elevated salinity levels are indicative of a salt panne, a shallow depression that retains sea water for very short periods of time such that salt accumulates to high levels over multiple tidal cycles. We are therefore proposing to conduct bioassays on the brine shrimp (*Artemia nauplii*), which are well suited for high salinities. Since there are no standard methods for testing chronic exposures to brine shrimp, PBS&J is developing an SOP for conducting 96-hour acute tests (survival endpoint) by referencing standard procedures for determining toxicity from produced (oilfield) waters.

3. Wetland Sediment Pore Water - The pore water sample EWSED04 collected for PAH analysis is not available for testing due to a laboratory error by Columbia Analytical Services. Benchmark Ecological Services will therefore remobilize to the site to collect this pore water sample. At that time they will also verify whether sufficient pore water is present at EWSED03, EWSED05, and EWSED09 (as well as sufficient surface water from EWSW02 and EWSW03), which were previously too dry to sample. Sampling is scheduled to take place the morning(s) of September 8 and 9. Processing of the associated pore water will be performed at Benchmark's Brookshire office in the afternoon.

Please let me know if these proposed modifications are acceptable.

Thanks.

Eric Pastor  
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